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[54]发明名称 一种泡沫葡萄酒及其生产工艺

[57]摘要

一种泡沫葡萄酒及其生产工艺，其特征是它采用植物大豆中的优质蛋白粉及葡萄原汁不经发酵按配方配制而成。配制1000Kg的所用的原料是葡萄原汁（55°BX）60.0Kg，白砂糖95.2Kg，酸味调节剂（酒石酸或柠檬酸）3.5Kg，食用酒精52.0Kg，蛋白质粉28.0Kg，葡萄香精1.0—1.25Kg，并用无菌水调整到1000Kg。该产品能产生出优于啤酒泡沫的产品，改善了传统葡萄酒的外观色彩并增加其营养成份，它提高了生产效率，降低了能源消耗。

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# 权 利 要 求 书

1、一种泡沫葡萄酒，其特征在于：配制 1000Kg 泡沫葡萄酒的原料用量是：

| 配方 | 配比（重量‰Kg） |
|---|---|
| 葡萄原汁（55°BX） | 60.0 |
| 白砂糖 | 95.2 |
| 酸味调节剂 | 3.5 |
| 食用酒精 | 52.0 |
| 蛋白质粉 | 28.0 |
| 葡萄香精 | 1.0——1.25 |

用无菌水调整到 1000Kg。

2、根据权利要求 1 所述的一种泡沫葡萄酒，其特征在于：原料中的蛋白质粉为植物大豆。

3、根据权利要求 1 所述的一种泡沫葡萄酒，其特征在于：原料中的酸味调节剂或是酒石酸，或是柠檬酸。

4、一种泡沫葡萄酒的生产工艺，其特征在于：

第一步首先将白糖经热化处理好，然后加活性炭处理杂质，制为纯净、澄清、透明的糖浆液；

第二步将化好的蛋白质粉，葡萄原汁加入到糖浆液内，制为糖浆混合液；

第三步在混合液内先加入柠檬酸，再加入已处理好的食用酒精和香精，经均质后与无菌碳水稀释、过滤，消毒，灌封，即为糖度 13°BX，酒度 5° 的泡沫葡萄酒。

5、根据权利要求 4 所述的泡沫葡萄酒的生产工艺，其特征在于：葡萄原汁的加工工艺是：

第一步清洗：将筛选出的葡萄在水里浸泡一次后，再用 0.03%的高锰酸钾溶液浸泡消毒 2——3 分钟，取出用水漂洗后，再用高压水冲洗干净；

第二步压碎和除梗：将洗净后的葡萄送往辊式压碎机上压碎，通过过滤网分离出葡萄和梗；

第三步将葡萄取出粗滤，取汁，滤渣再进行榨汁，两次葡萄汁混合后进行冷却；

第四步除果肉浆：将榨好的葡萄汁里混入的果肉浆，先进行酸处理，然后离心分离除去果肉浆；

第五步杀菌和冷却：将分离果肉后的果汁通过板式热交换器加热至 85℃，维持 15 秒钟杀菌，然后冷却至 45℃；

第六步澄清（酶处理）：在 40——45℃的混浊果汁中加入 0.01——0.05%的果胶酶，搅拌混合，作用 4——10 小时；

第七步过滤：将澄清后的果汁用硅藻土过滤，硅藻土的用量为果汁的 0.5——1%，过滤后可得到透明度较好的果汁；

第八步浓缩：将过滤后得到的透明果汁用薄板冷却器进行低温短时间浓缩，浓缩后果汁糖度为 58——60$^0$BX；

第九步调整糖度：将浓缩后的果汁（已除去酒石），糖度调整到 55$^0$BX；

第十步杀菌，罐装，冷却：将透明的果汁通过热交换器处理，其处理温度为 90℃，时间为 30 秒进行杀菌，然后迅速冷却至 85℃，装罐脱气后，加盖密封，倒置 2 分钟后，将罐头冷却到 30℃以下备用。

6、根据权利要求 4 所述的一种泡沫葡萄酒的生产工艺，其特征在于：食用酒精的处理工艺是：

第一步先将 95%以上的食用粗酒精加水稀释到 14°；

第二步在稀释后的酒精里加入 0.3——0.5%的活性碳，0.01%的高锰酸钾，0.07%的氢氧化钠静至 24 小时后进行蒸馏，成品浓度为 80°，回收率为 95%。

7、根据权利要求 4 所述的一种泡沫葡萄酒的生产工艺，其特征在于：植物大豆蛋白粉的加工工艺是：

第一步先将植物大豆分三次洗净，然后将洗净的植物大豆浸泡在 3 倍的常温水中（夏天浸泡 8——10 小时，冬天浸泡 16——20 小时）；

第二步将浸泡好的植物大豆投入砂轮磨，进行研磨，该工艺是用 80℃以上的热水进行热磨，植物大豆和水的比例为 1：5；

第三步将磨出的豆浆泵入离心式分离桶内，再用 200 目滤网过滤浆渣，为考虑蛋白质的回收利用，再把热浆进行二次分离，这样能降低浆体粘度，利于分离，待进行二次分离后，再用 1：3 的清水做第三次分离；

第四步将经三次分离后的浆体送往干燥机内烘干，特别是烘干温度一定要保持在 80——85℃，以取得色、香、味具全的植物大豆蛋白质粉；

第五步将烘烤后的植物大豆蛋白质粉通过 6——8 目筛子进行筛选，制取出颗粒均匀的蛋白质粉。

# 说 明 书

## 一种泡沫葡萄酒及其生产工艺

本发明涉及一种以植物大豆或从其它谷类原料中提取优质蛋白质及葡萄原汁为主要原料且不经发酵而配制成的一种泡沫葡萄酒，它不仅保持了传统葡萄酒的风味及营养，丰富、细腻的泡沫又赋予饮用者一种愉快的美感和显著的降温作用。

据目前葡萄酒的生产技术，只有经过发酵才能生产出丰富而又细腻的泡沫来。

本发明的主要目的是针对以上的不足而研制的一种泡沫葡萄酒，它是采用药食兼用的植物大豆或其它谷类原料中的优质蛋白质及葡萄原汁，不经发酵按配方配制而成。研究泡沫葡萄酒之目的是为了减少发酵部分的投资，改进传统葡萄酒的外观色彩，增加传统葡萄酒的营养成份。

本发明是这样实现的，配制 1000Kg 泡沫葡萄酒的原料是由下述重量配比组成：

| 配方 | 配比（重量‰Kg） |
|---|---|
| 葡萄原汁（55°BX） | 60.0 |
| 白砂糖 | 95.2 |
| 酸味调节剂 | 3.5 |
| 食用酒精 | 52.0 |
| 蛋白质粉 | 28.0 |
| 葡萄香精 | 1.0——1.25 |
| 用无菌水调整到 1000Kg | |

本发明原料中的蛋白质粉为植物大豆。

本发明原料中的酸味调节剂可以是酒石酸，还可以是柠檬酸。

本发明的生产工艺是：

第一步首先将白糖经热化处理好，然后加活性炭处理杂质，制为纯净、澄清、透明的糖浆液；

第二步将化好的蛋白质粉，葡萄原汁加入到糖浆液内，制为糖浆混合液；

第三步在混合液内先加入柠檬酸，再加入已处理好的食用酒精和香精，经均质后与无菌碳水稀释、过滤，消毒，灌封，即为糖度 13°BX，酒度 5° 的泡沫葡萄酒。

本发明葡萄原汁的加工工艺是：

第一步清洗：将筛选出的葡萄在水里浸泡一次后，再用 0.03% 的高锰酸钾溶液浸泡消毒 2——3 分钟，取出用水漂洗后，再用高压水冲洗干净。

第二步压碎和除梗：将洗净后的葡萄送往辊式压碎机上压碎，通过过滤网分离出葡萄和梗。

第三步将葡萄取出粗滤，取汁，滤渣再进行榨汁，两次葡萄汁混合后进行冷却。

第四步除果肉浆：将榨好的葡萄汁里混入的果肉浆，先进行酸处理，然后离心分离除去果肉浆。

第五步杀菌和冷却：将分离果肉后的果汁通过板式热交换器加热至 85℃，维持 15 秒钟杀菌，然后冷却至 45℃。

第六步澄清（酶处理）：在 40——45℃的混浊果汁中加入 0.01——0.05% 的果胶酶，搅拌混合，作用 4——10 小时。

第七步过滤：将澄清后的果汁用硅藻土过滤，硅藻土的用量为果

汁的 0.5——1%，过滤后可得到透明度较好的果汁。

第八步浓缩：将过滤后得到的透明果汁用薄板冷却器进行低温短时间浓缩，浓缩后果汁糖度为 58——60°BX。

第九步调整糖度：将浓缩后的果汁（已除去酒石），糖度调整到 55°BX。

第十步杀菌，罐装，冷却：将透明的果汁通过热交换器处理，其处理温度为 90℃，时间为 30 秒进行杀菌，然后迅速冷却至 85℃，装罐脱气后，加盖密封，倒置 2 分钟后，将罐头冷却到 30℃以下备用。

本发明对食用酒精的处理工艺是：

第一步先将 95%以上的食用粗酒精加水稀释到 14°。

第二步在稀释后的酒精里加入 0.3——0.5%的活性碳，0.01%的高锰酸钾，0.07%的氢氧化钠静至 24 小时后进行蒸馏，成品浓度为 80°，回收率为 95%。

本发明植物大豆蛋白粉的加工工艺是：

第一步先将植物大豆分三次洗净，然后将洗净的植物大豆浸泡在 3 倍的常温水中（夏天浸泡 8——10 小时，冬天浸泡 16——20 小时）。

第二步将浸泡好的植物大豆投入砂轮磨，进行研磨，该工艺是用 80℃以上的热水进行热磨，植物大豆和水的比例为 1：5。

第三步将磨出的豆浆泵入离心式分离桶内，再用 200 目滤网过滤浆渣，为考虑蛋白质的回收利用，再把热浆进行二次分离，这样能降低浆体粘度，利于分离，待进行二次分离后，再用 1：3 的清水做第三次分离。

第四步将经三次分离后的浆体送往干燥机内烘干，特别是烘干温度一定要保持在 80——85℃，以取得色、香、味具全的植物大豆蛋白

质粉。

第五步将烘烤后的植物大豆蛋白质粉通过 6——8 目筛子进行筛选，制取出颗粒均匀的蛋白质粉。

本发明的积极效果是：

1、该产品改进了传统葡萄酒的外观色彩，增加了传统葡萄酒的营养成份，赋予饮用者一种愉快的美感。

2、该产品是不经发酵生产的产品，它是能产生出优于啤酒泡沫性能的产品，它能减少发酵部分的设备投资，提高了生产效率，降低了能源消耗。

以下结合实施例对本发明作进一步的详细说明。

生产 1000Kg 的泡沫葡萄酒的生产工艺是：

第一步先把白糖加工成 65°BX 的糖浆。在受热罐（夹层锅）内倒入 95.2Kg 的白糖，加水量为 51.2Kg，搅拌均匀后蒸气加热至沸点，5 分钟后，加入 0.5Kg 活性炭处理杂质，边加入，边搅拌，待活性炭加入 15 分钟后。停止加热，保温在 80℃，然后过滤，制得纯净澄清的糖浆液。

第二步在 140Kg 的水中加入 28Kg 的蛋白质粉，边加入，边搅拌，待溶解后备用。

第三步将已溶解的蛋白质粉和 60Kg 葡萄原汁分别加入到纯净、透明的糖浆液里，制为糖浆混合液。

第四步在 7Kg 的温水中加入 3.5Kg 的柠檬酸，待溶解后倒入糖浆混合液里，然后加入 52Kg 的处理后的食用酒精及 1.1Kg 的葡萄香精，再用无菌水调整到 1000Kg，经混合，过滤后充入二氧化碳消毒，灌封，即为糖度 13°BX，酒精为 5° 的 1000Kg 泡沫葡萄酒。

Chinese Application No. 99120021.7 Publication No. CN 1253173A

## ABSTRACT

A foam grape wine and a production method thereof, is characterized in that the wine is formulated without fermentation from high quality protein powder in plant soybeans and raw grape juice. 1000kg wine requires the starting materials of 60.0kg(55°BX) raw grape juice, 95.2kg white granulated sugar, 3.5kg acid regulator(tartaric acid or citric acid), 52.0kg edible alcohol, 28.0kg protein powder and 1.0-1.25kg grape essence, which are adjusted to 1000kg with sterile water. The foam of this product is superior to beer foam. The product has improved apparent color over traditional wine, increased nutrient ingredients. And the production improves productivity and decreases energy consumption.

Chinese Application No. 99120021.7 Publication No. CN 1253173A

# FOAM GRAPE WINE AND PRODUCTION METHOD THEREOF

The present invention relates to a foam grape wine, formulated without fermentation mainly from plant soybeans or high quality proteins extrated from other raw cereal materials, with raw grape juice. Said wine not only keeps the taste and nutrition of traditional wine but also endows drinkers with a pleasant feel by rich and fine foams, and it also has a remarkable cooling effect.

Current wine production techniques cannot produce rich and fine foams without fermentation.

The main object of the present invention is to develop a foam grape wine in view of the above disadvantage. Pharmaceutical and edible soybeans, or high quality proteins from other raw cereal materials, and raw grape juice are employed to formulate the foam grape wine without fermentation. The object of developing a foam grape wine is to reduce investment in fermentation, to improve the apparent color of the traditional wine, and to increase the nutrient ingredients therein.

The present invention is carried out as described hereinafter. The starting materials and amounts thereof for formulating 1000kg foam grape wine are:

| Formula | Proportion (wt‰kg) |
|---|---|

| | |
|---|---|
| Raw grape juice (55°BX) | 60.0 |
| White granulated sugar | 95.2 |
| Acid regulator | 3.5 |
| Edible alcohol | 52.0 |
| Protein powder | 28.0 |
| Grape essence | 1.0-1.25 |

Adjusted to 1000kg by sterile water.

The protein powder in the starting materials of the present invention is plant soybeans.

The acid regulator in the starting materials of the present invention is either tartaric acid or citric acid.

The production method of the present invention is:

Step 1. White granulated sugar was heat treated, and then activated charcoal was added to treat impurities to prepare a purified, clarified and transparent syrup;

Step 2. Treated protein powder and raw grape juice were added into the syrup to prepare a mixed syrup solutino;

Step 3. Citric acid was first added into the mixed solution, and then treated edible alcohol and essence were added. And the syrup, after homogenization, was diluted and filtered by sterile carbon water, and disinfected and canned and sealed. Thus the resultant liquid was foam grape wine with a Brix degree of 13°BX and an alcohol of 5°.

The processing method of the raw grape juice is:

Step 1 Purging: screened grapes were soaked in water once and then soaked and disinfected in a solution of 0.03% potassium permanganate for 2-3 minutes, removed from the solution, rinsed by water, and then washed clean by high-pressure water.

Step 2 Crushing and Destemming: clean grapes were crushed on a roller crusher, and grapes and stems were separated through a filter cloth;

Step 3 Grapes were taken out for rough filtering and juice was obtained; the filter residue was further expressed. Both grape juice were mixed and cooled;

Step 4 Pulp-removing: expressed grape juice mixed with a pulp was subjected to acid treatment and then the pulp was removed by centrifugal isolation;

Step 5 Sterilizing and Cooling: pulp-removed juice was heated to 85°C by a plate heat exchanger and sterilized for 15 seconds and then cooled to 45°C;

Step 6 Clarifying (Enzyme Treatment): 0.01-0.05% pectinase was added into the thick juice at 40—45°C and stirred and mixed to react for 4-10 hours;

Step 7 Filtering: clarified juice was filtered using diatomite at an amount of 0.5-1% of the juice. Juice

with high transparency was thus obtained after the filtration.

Step 8 Concentrating: transparent juice after filtration was concentrated at a low temperature for a short time period by a sheet cooler so that the Brix degree of concentrated juice was 58-60°BX;

Step 9 Adjusting Brix degree: the Brix degree of the concentrated juice (with the tartar removed) was adjusted to 55°BX;

Step 10 Sterilizing, Canning and Cooling: transparent juice was treated by a heat exchanger at 90°C, and was sterilized for 30 seconds and fast cooled to 85°C, and was canned, degasificated, lidded, and sealed, and the cans standed upside down for 2 minutes and were cooled below 30°C for use.

The processing method of the edible alcohol is:

Step 1. More than 95% of edible crude alcohol was diluted by water to 14°;

Step 2. 0.3-0.5% activated charcoal, 0.01% potassium permanganate and 0.07% sodium hydroxide were added to the diluted alcohol. The alcohol was kept still for 24 hours and then distilled. The resultant product had a concentration of 80° and a recover rate of 95%.

The processing method of the plant soybean protein powder is:

Step 1. Plant soybeans were washed three times and then soaked in 3 volumes of water at room temperature (for 8-10 hours in the summer and 16-20 hours in the winter);

Step 2. Soaked plant soybeans were ground in a grinding miller using hot water at more than 80°C, with the plant soybeans and water at the ratio of 1:5;

Step 3. The resultant soy milk from grinding was pumped into centrifugal isolation bucket, and the filter residue were filtered by a 200 mesh filter cloth. Then the hot slurry was subjected to a second isolation inview of the recover and use of protein. By this means, viscosity of the slurry was decreased, which was beneficial to isolation. After the second isolation, the slurry was subjected to a third isolation, with the slurry and water at the ratio of 1:3;

Step 4. The slurry, after isolation for three times, was dried at a drier, especially at the temperature of 80-85°C so as to obtain plant soybean protein powder having good color, smell and taste;

Step 5. Dried plant soybean protein powder was sieved by a 6-8 mesh sieve to obtain homogeneous protein powder.

The advantageous effect of the present invention is:

1. The product improves the apparent color of traditional wine, increases the nutrient ingredients thereof, and endows drinkers with a pleasant feel.

2. The product does not go through fermentation, and the foam thereof is superior to beer foam. The production thereof can reduce investment in fermentation, improve productivity and decrease energy consumption.

Hereinafter is an example for further explaination of the present invention.

The production method of 1000kg foam grape wine is:

Step 1. White sugar was Processed to a syrup of 65°BX. 95.2kg white sugar was poured into a heating pot (a jacket kettle) and 51.2kg water was added. After stirring uniformly, the syrup was heated by steam to the boiling point. After 5 minutes, 0.5 kg activated charcoal was added and stirred simultaneously to treat impurities. Heating was stoped after 15 minutes of the addition of the activated charcoal and the temperature was kept at 80°C, and then the syrup was filtered to prepare a purified and clarified syrup;

Step 2. 28kg protein powder was added into 140kg water and stirred simultaneously for use after dissolution.

Step 3. Dissolved protein powder and 60kg raw grape juice were separately added into the purified and transparent syrup to prepare a mixed syrup solution.

Step 4. 3.5kg citric acid was added into 7kg warm water and after dissolution poured into the mixed syrup solution. Then 52kg treated edible alcohol and 1.1kg grape essence were added and sterile water was added to adjust to 1000kg. After mixing and filtering, carbon dioxide was filled for disinfection. After canning and sealing, the resultant product was 1000kg foam grape wine with a Brix degree of 13°BX and an alcohol of 5°.

## CLAIMS

1. A foam grape wine, characterized in that: starting materials and amounts thereof for formulating 1000kg foam grape wine are:

| Formula | Proportion (wt‰kg) |
|---|---|
| Raw grape juice (55°BX) | 60.0 |
| White granulated sugar | 95.2 |
| Acid regulator | 3.5 |
| Edible alcohol | 52.0 |
| Protein powder | 28.0 |
| Grape essence | 1.0-1.25 |

Adjusted to 1000kg by sterile water.

2. The foam grape wine according to Claim 1, characterized in that the protein powder in the starting materials is plant soybean.

3. The foam grape wine according to Claim 1, characterized in that the acid regulator is either tartaric acid or citric acid.

4. A production method of foam grape wine, characterized in that:

Step 1) White granulated sugar is heat treated, and then activated charcoal is added to treat

impurities to prepare a purified, clarified and transparent syrup;

Step 2) Treated protein powder and raw grape juice are added into the syrup to prepare a mixed syrup solution;

Step 3) Citric acid is first added into the mixed solution, and then treated edible alcohol and essence are added; and the syrup, after homogenization, is diluted and filtered by sterile carbon water, and disinfected and canned and sealed; thus the resultant liquid is foam grape wine with a Brix degree of 13°BX and an alcohol of 5°.

5. The production method of foam grape wine according to Claim 4, characterized in that the processing method of the raw grape juice is:

Step 1 Purging: screened grapes are soaked in water once and then soaked and disinfected in a solution of 0.03% potassium permanganate for 2-3 minutes, removed from the solution, rinsed by water, and washed clean by high-pressure water;

Step 2 Crushing and Destemming: clean grapes are crushed on a roller crusher, and grapes and stems are separated through a filter cloth;

Step 3 Grapes are taken out for rough filtering and juice is obtained; the filter residue is

further expressed; both grape juice are mixed and cooled;

Step 4 Pulp-removing: expressed grape juice mixed with a pulp is subjected to acid treatment and then the pulp is removed by centrifugal isolation;

Step 5 Sterilizing and Cooling: pulp-removed juice is heated to 85°C by a plate heat exchanger and sterilized for 15 seconds and then cooled to 45°C;

Step 6 Clarifying (Enzyme Treatment): 0.01-0.05% pectinase is added into the thick juice at 40—45°C and stirred and mixed to react for 4-10 hours;

Step 7 Filtering: clarified juice is filtered using diatomite at an amount of 0.5-1% of the juice; juice with high transparency is thus obtained after the filtration;

Step 8 Concentrating: transparent juice after filtration is concentrated at a low temperature for a short time period by a sheet cooler so that the Brix degree of concentrated juice is 58-60°BX;

Step 9 Adjusting Brix degree: the Brix degree of the concentrated juice (with the tartar removed) is adjusted to 55°BX;

Step 10 Sterilizing, Canning and Cooling: transparent juice is treated by a heat exchanger at 90°C, and is sterilized for 30 seconds and fast

cooled to 85°C, and is canned, ligged, degasificated, and sealed, and the cans stand upside down for 2 minutes and are cooled below 30°C for use.

6. The production method of foam grape wine according to Claim 4, characterized in that the processing method of the edible alcohol is:

Step 1) More than 95% of edible crude alcohol is diluted by water to 14°;

Step 2) 0.3-0.5% activated charcoal, 0.01% potassium permanganate and 0.07% sodium hydroxide are added to the diluted alcohol; the alcohol is kept still for 24 hours and then distilled; the resultant product has a concentration of 80° and a recover rate of 95%.

7. The production method of foam grape wine according to Claim 4, characterized in that the processing method of the plant soybean protein powder is:

Step 1) Plant soybeans are washed three times and then soaked in 3 volumes of water at room temperature (for 8-10 hours in the summer and 16-20 hours in the winter);

Step 2) Soaked plant soybeans are ground in a grinding miller using hot water at more than 80°C, with the plant soybeans and water at the ratio of 1:5;

Step 3) The resultant soy milk from grinding is pumped into centrifugal isolation bucket, and the filter residue are filtered by a 200 mesh filter cloth; then the hot slurry is subjected to a second isolation in view of the recover and use of protein; by this means, viscosity of the slurry is decreased, which is beneficial to isolation; after the second isolation, the slurry is subjected to a third isolation, with the slurry and water at the ratio of 1:3;

Step 4) The slurry, after isolation for three times, is dried at a drier, especially at the temperature of 80-85°C so as to obtain plant soybean protein powder having good color, smell and taste;

Step 5) Dried plant soybean protein powder is sieved by a 6-8 mesh sieve to obtain homogeneous protein powder.